

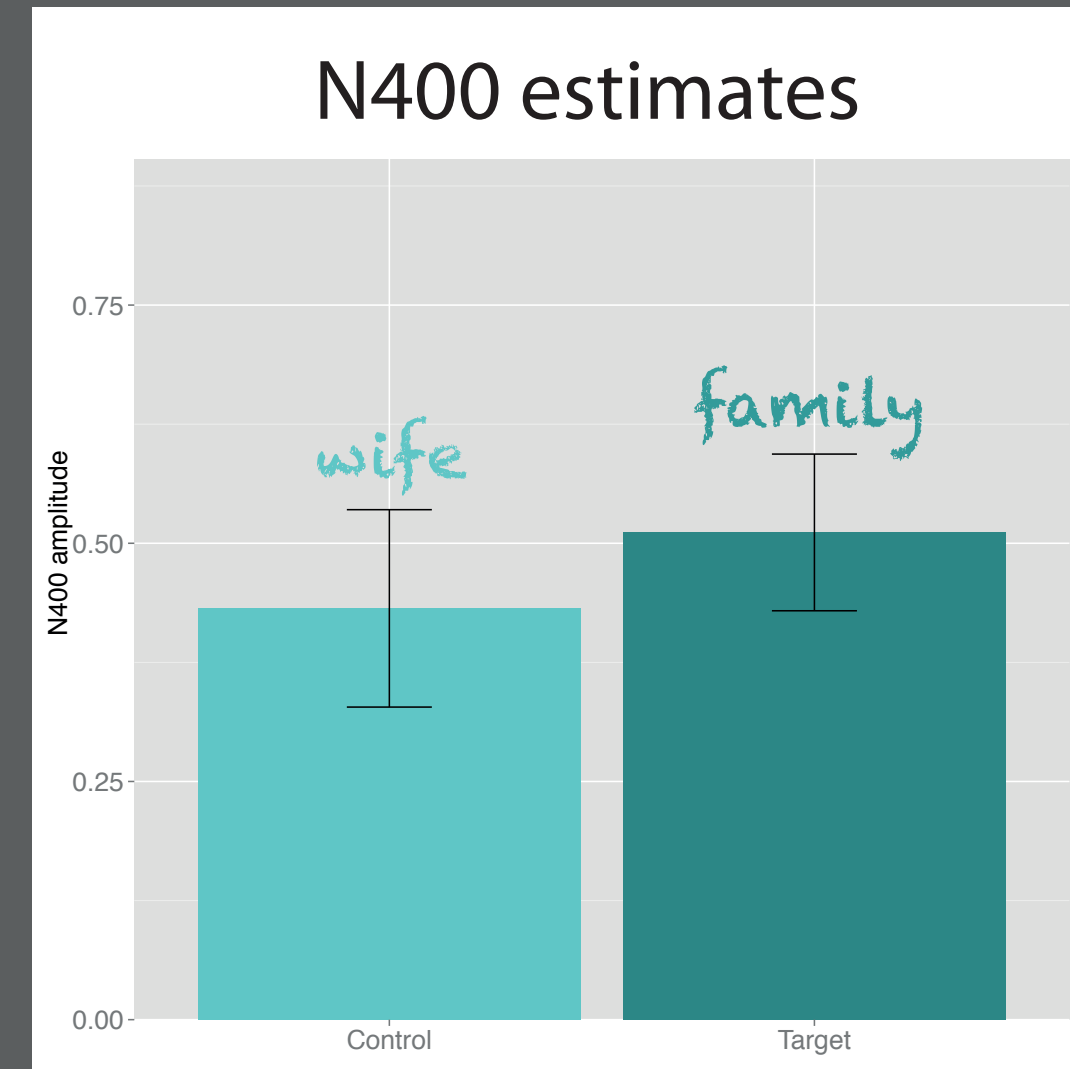
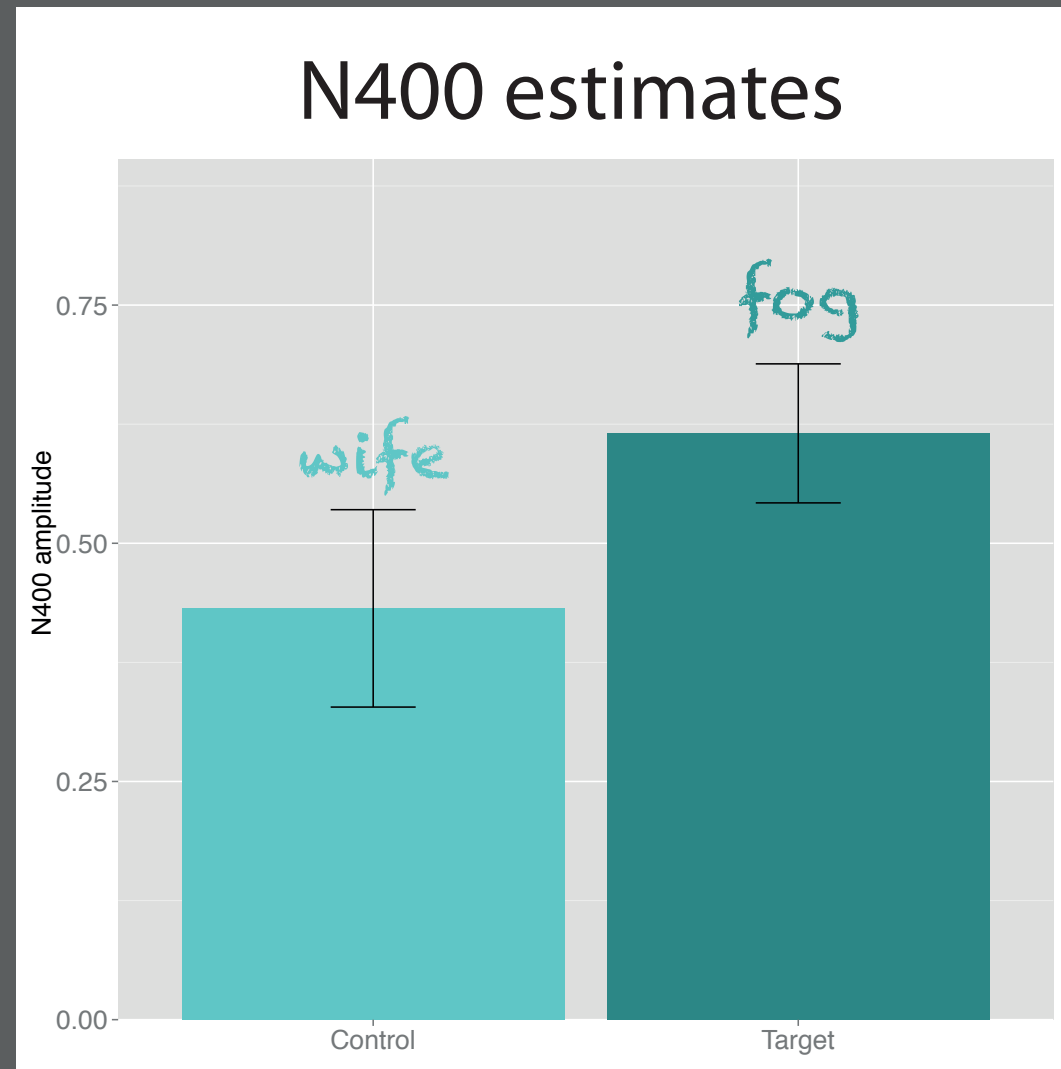
Indexing the N400 and the P600 in a Computational Model of Sentence Comprehension

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Semantic Anomaly and Expectancy

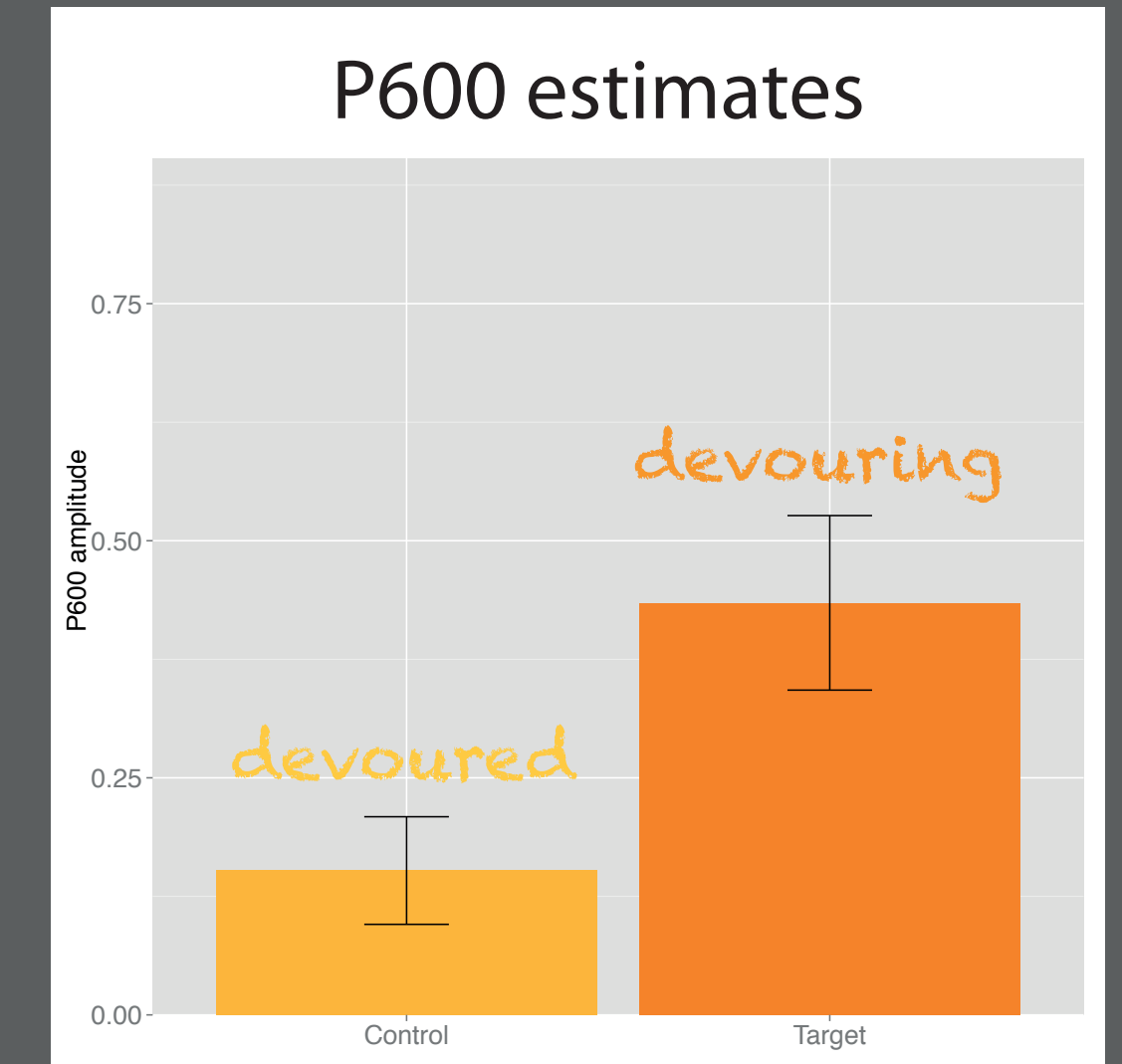
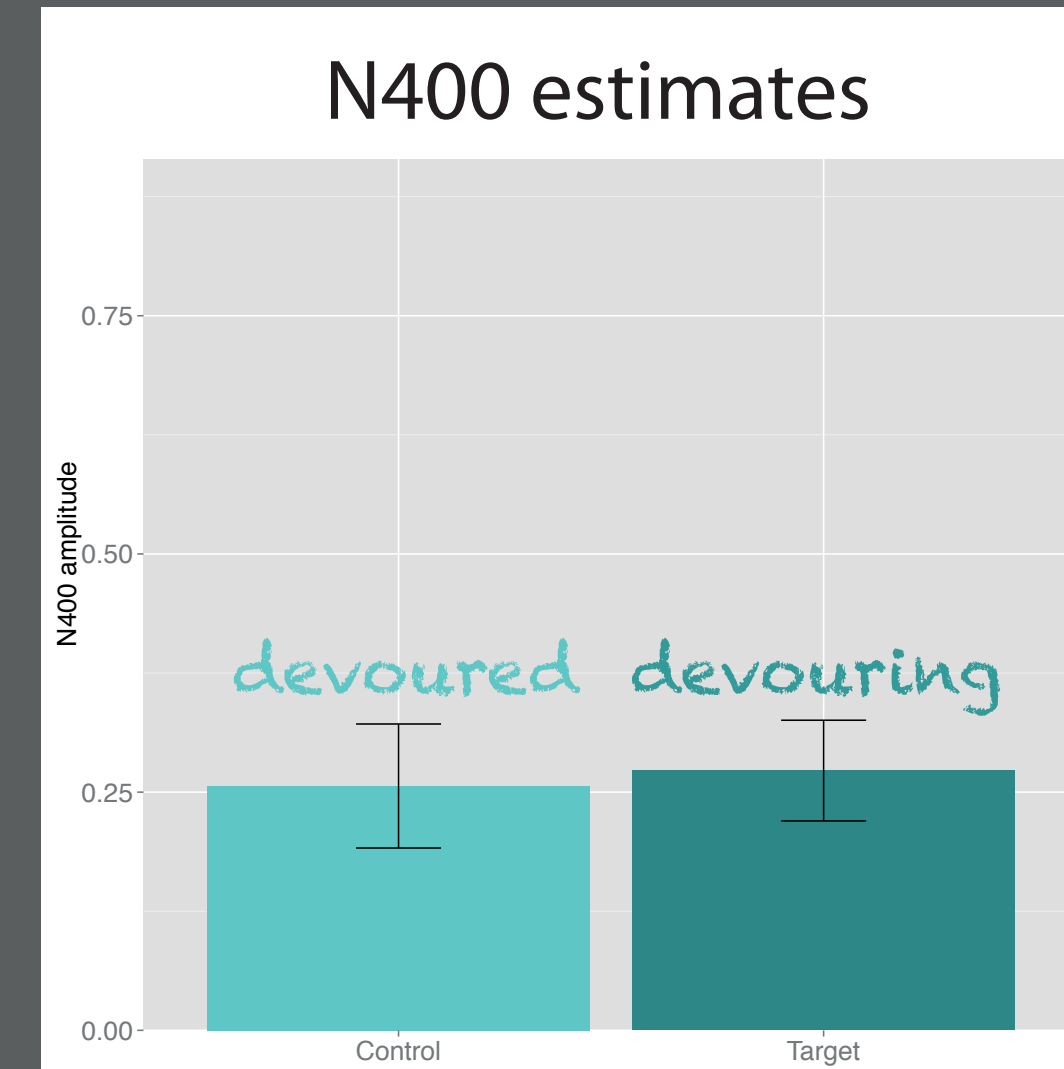
George had been fired,
but he couldn't tell his fog/family/wife



Kutas et al. (1984)

"Semantic P600"-effects

The hearty meal was devouring/devoured [...]



Kim & Osterhout (2005)

Retrieval-Integration account

P600 is semantic integration

N400 is lexical retrieval

incoming word

Brouwer et al. (2012)

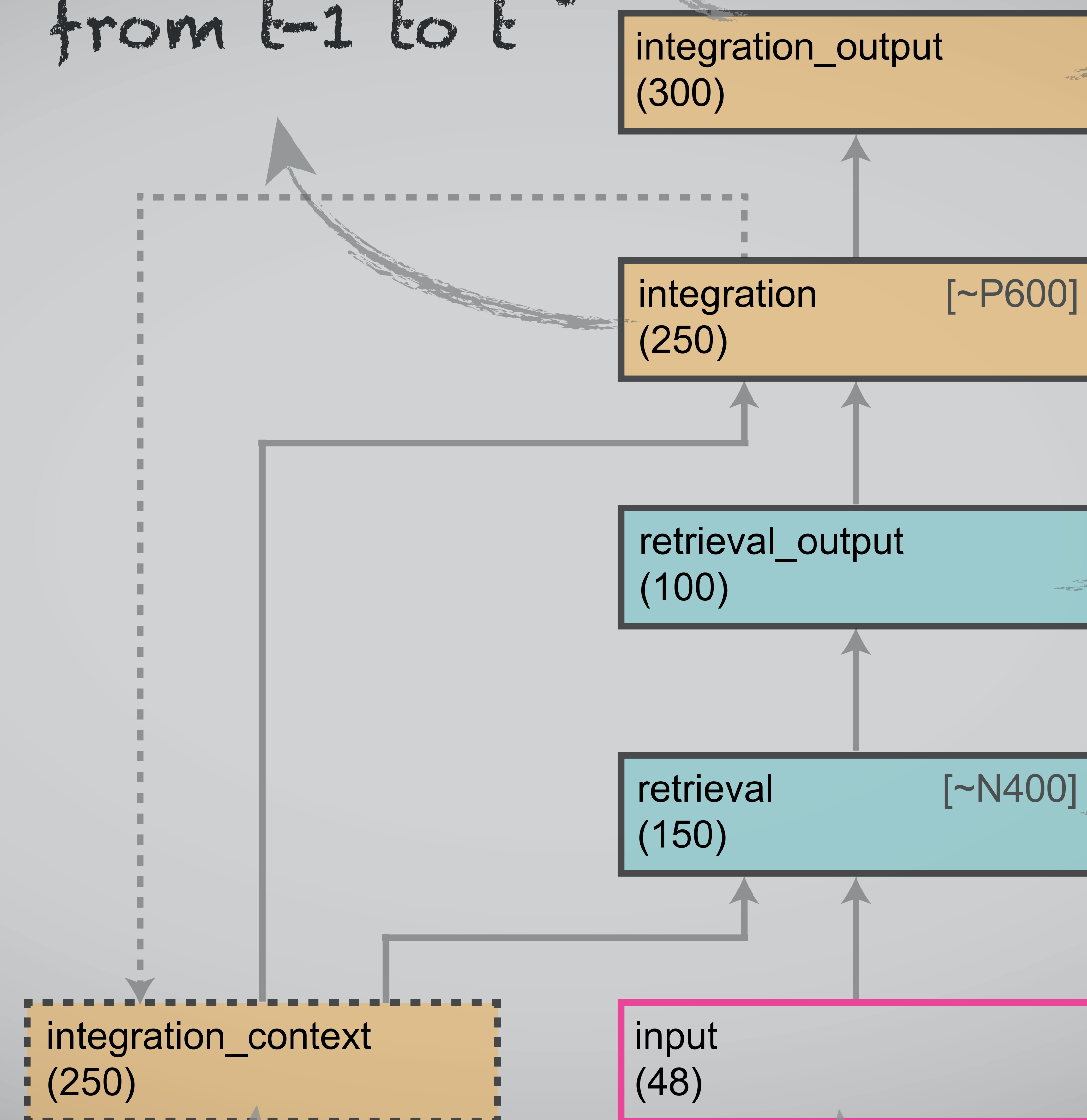
P600 = Δ activity from $t-1$ to t

utterance interpretation (DSS)

Frank et al. (2003)

$$\text{Surprisal} = -\log P(\text{DSS}_t | \text{DSS}_{t-1})$$

Venhuizen et al. (in press)



feature-based word meaning representation

N400 = Δ activity from $t-1$ to t

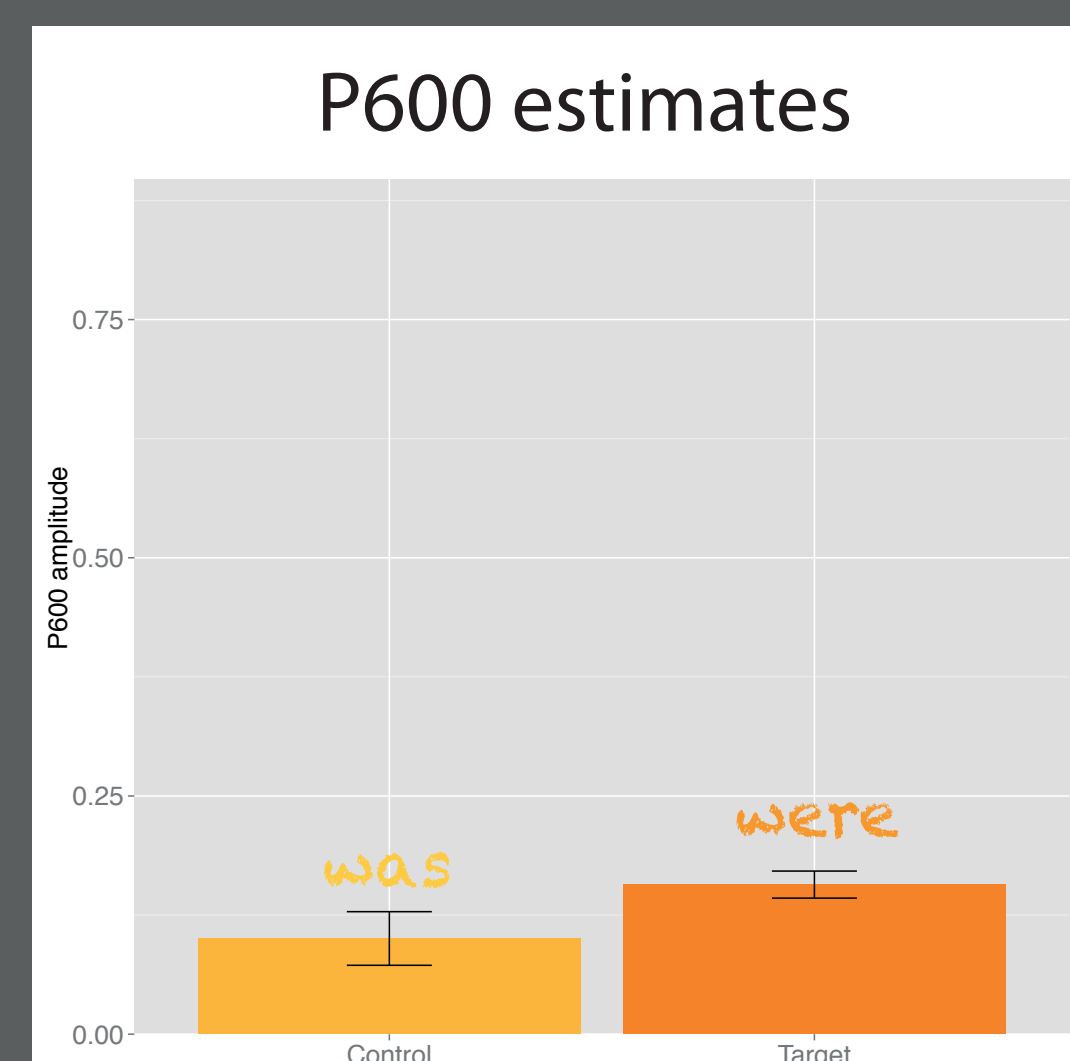
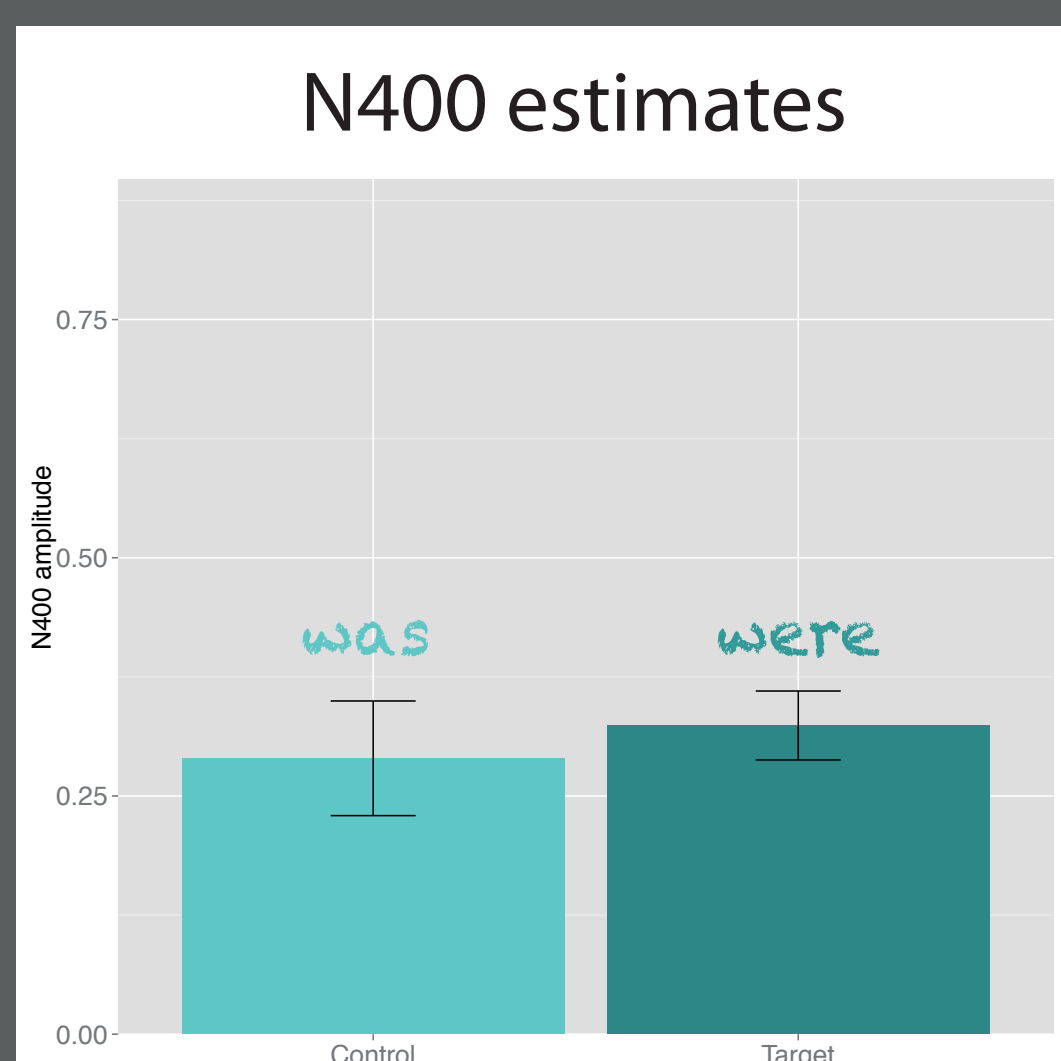
Brouwer et al. (2017)

context established at timestep $t-1$

word perceived at timestep t

Syntactic Violations

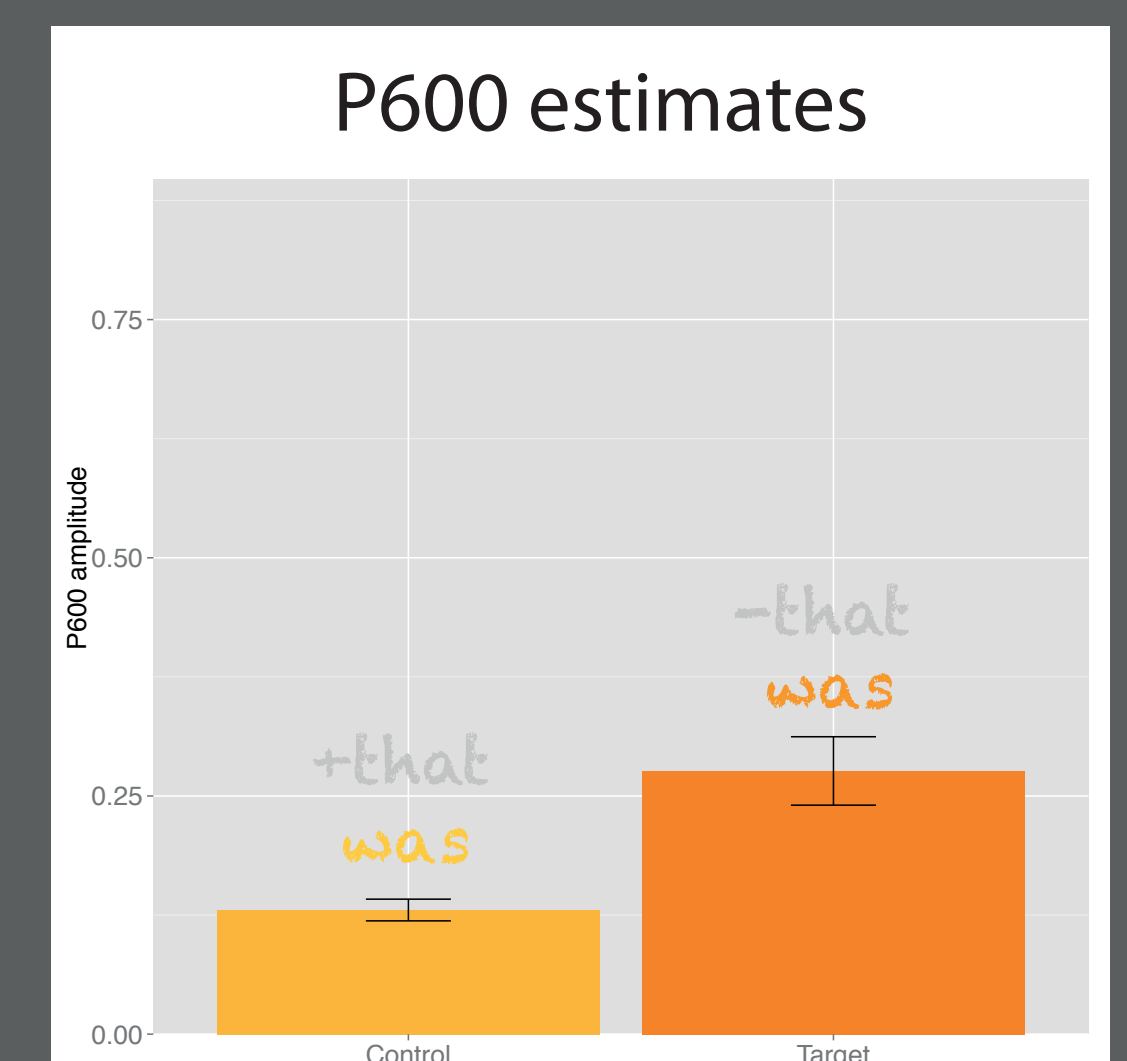
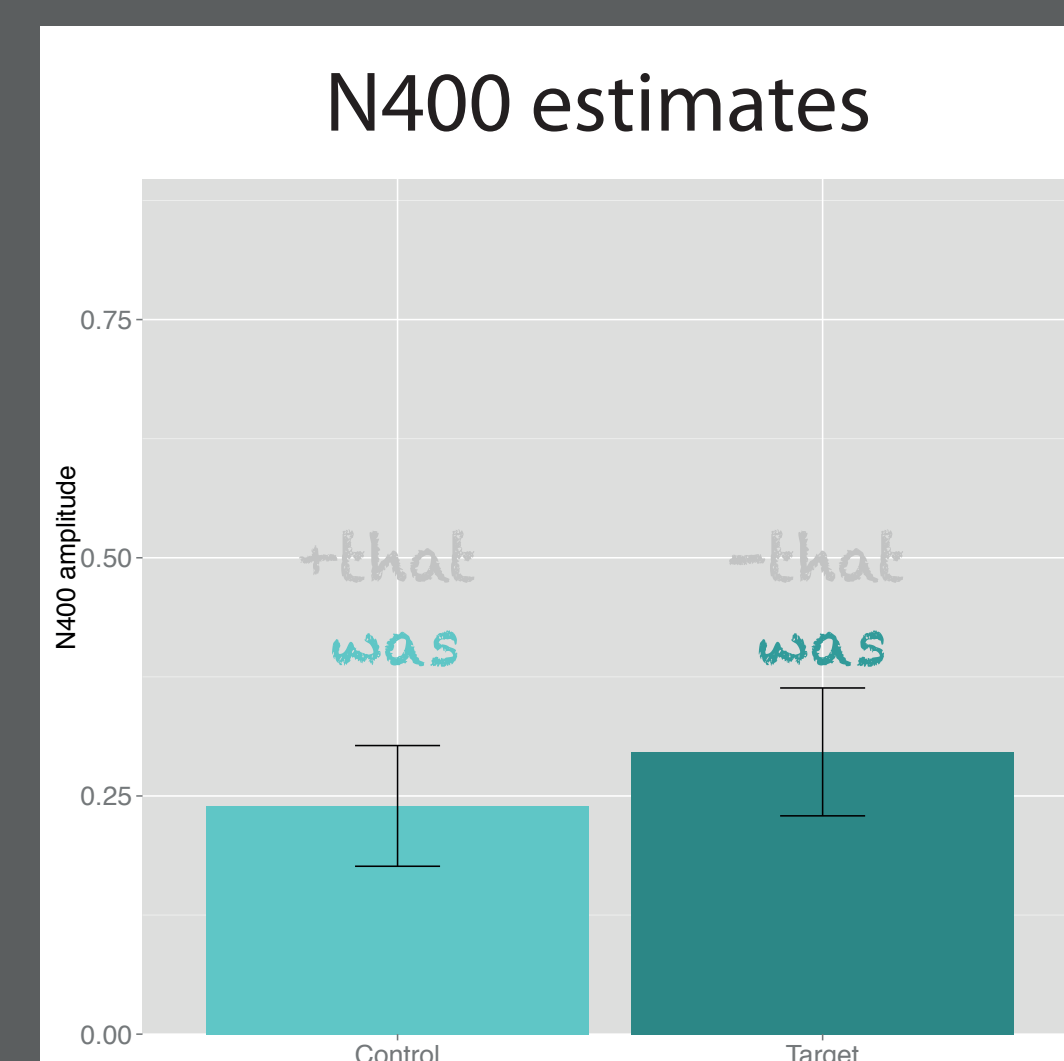
The famous dancer were/was [...]



Molinaro et al. (2008)

Garden-paths

The lawyer charged [that] the defendant was [...]



Osterhout et al. (1994)



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